

AMENDMENTS TO THE CLAIMS:

1-11. (Canceled)

12. (New) A hologram system comprising:

a recording medium comprising photosensitive material; and

a hologram recording and reproducing apparatus including:

a supporting part for loadably supporting the recording medium;

a signal light beam optical system for allowing a coherent signal light beam modulated in response to predetermined data to enter the recording medium;

a reference light beam optical system for allowing a coherent reference light beam to enter the recording medium, said signal light beam optical system and said reference light beam optical system configured so as to intersect and interfere the coherent signal light beam and the coherent reference light beam to make an interference pattern within the recording medium so as to produce a grating therein;

a photodetector for receiving a reproduction light from the grating when the recording medium is irradiated with the coherent reference light beam and converting the received reproduction light into an electrical signal; and

a data processing part for demodulating the electrical signal to obtain the predetermined data,

wherein said data processing part includes a reference memory for storing pieces of reference data in advance of the predetermined data,

wherein said recording medium includes a reference data area for storing at least one

pieces of reference data stored in the reference memory of said data processing part in advance of the predetermined data, and

wherein, when the reference data area is irradiated with the coherent reference light beam to reproduce the reference data, said data processing part calculates a difference between the reproduced reference data from the reference data area and the reference data stored in the reference memory, the difference exhibiting an error sum of a recording error of the apparatus that performed recording in the recording medium and of a reproduction error of the recording medium.

13. (New) A hologram system according to claim 12, wherein said data processing part discriminates a kind of the recording medium by using the reproduced reference data from the reference data area.

14. (New) A hologram system according to claim 12, wherein said data processing part demodulates the predetermined data by using the difference exhibiting the error sum, whereby the predetermined data can be reproduced correctly.